

## WANT CLOCKS OF MANY WAYS

RECENT EXAMPLE OF INGENUITY IN TIMEPIECE WORKING.

Clock that Represents Events in American History. Timetable Made of Glass. Instead of Steel & Glass, Clock Case is a Bottle.

The first mechanical device for telling the time was the sundial. Of course in this class, a substance was necessary and the sand glass followed later came the water clock, a curious gnomon or sun among the Egyptians, Chaldeans, Babylonians and other ancient peoples of the East.

This was the first approach to a clock as we now understand the term. It consisted of a basin of water set in some public place. At one end of the basin was a spout from which the water dropped uniformly into a receiver having gradations for marking the hours somewhat after the fashion of a thermometer.

The clocks of today, writes William T. Walsh in the *Scientific American*, do not surpass or even equal those of the fourteenth and fifteenth century in the wonder or beauty of their construction. Clocks are common things. Every household has at least one. We do not have to depend upon the great timepieces of church belfry or of tower. Relatively, like everything else in this modern day, because of its common character the clock has lost something in importance. Still the charm endures of creating unusual types.

For instance, in the very modern city of Chicago the spirit of the old clockmakers lives in the person of one Franz Bohack, a native of Patzau, Bohemia. Twenty years of careful, patient labor have seen his efforts crowned by the completion of what is one of the most remarkable timepieces ever seen in America. In it the maker has combined the artistic spirit of the craftsman of the middle ages with the accuracy of the twentieth century man of science.

Bohacek's clock, made up of more than one thousand parts, is two stories high. Its weights are so heavy that two windlasses must be employed to wind them up. It is a very elaborate affair altogether and yet every part has a specific reason for being. It has five dials. The first of these is that of the ordinary clock, merely for telling the time of day.

The second also is for that purpose, only in place of twelve numbers there are twenty-four, somewhat in the style of the old one hand Italian clocks. On the next dial the day of the week, the day of the month and the month of the year are indicated by three series of numbers and three hands. The fourth dial, six feet in diameter, represents the solar system, with the sun in the centre and the various planets revolving about. These celestial bodies travel in exact accord with the real solar system itself.

The fifth and last dial marks time, in exact or practically exact, harmony with the laws of astronomy. As every one knows, the year consists of 365 days 5 hours 48 minutes 46 seconds. Each month, thirteen in number, has therefore, 28 days, and each day consists of 24 hours 5 minutes 54 seconds. On Bohacek's clock, a second, as measured by ordinary clocks, is 0.000125 of a second longer. This is not precisely right, being in a day 55/100 of a second long—a slight discrepancy, all things considered.

This clock has many other remarkable features besides those already mentioned. There are figures that represent various events in American history. There are figures for all the Presidents of the United States and one held in reserve. These figures appear at appropriate moments. This remarkable timepiece has many other extraordinary features, which lack of space will not permit to be chronicled here.

Another Bohemian, Joseph Bayer, a glass cutter by trade, resident in the country of his birth, has employed glass as a medium for building a clock. With the exception of the spring every portion is of crystal glass. The three hands, hour, minute and second, as well as the gnomon for striking are all of glass. The clock is sixteen inches high.

An Italian, Siro Tiburzi of Fabriano, Italy, has tried his hand at a clock made solely of wicker work and poplar twigs. The dial, cord and weights are of wicker work, the remaining parts are of both wicker work and poplar twigs. The mechanism is similar to that of a tower clock, with the exception of the striking parts, with which it is not equipped. It stands eight feet high and will run twenty-seven hours with one winding.

Another nationality and another sort of timepiece are represented by a straw clock of a German shoemaker. It is built wholly of this one material, of which the threads and needles were used in the construction. There are eight columns. The mechanism is wound up by the pressing of a button, when it will run for five hours. The bands are set by means of another button. No spring is used. The weight of this ingenious bit of craftsmanship is seven ounces.

The flower clock while not so novel as some others, is still a very interesting type of the general idea. The single floral clock of which England can boast began to run in the summer of 1907 and was started by the Mayors of Bridlington, where it is located. Ten thousand plants make up the dial, which is twelve feet in diameter, set in a circular frame one foot wide. The dial numbers, the minutes and the fiftieths of minutes are marked off each by a different kind of plant.

A clock in a bottle is the unusual device of a German watchmaker, H. Rosin of Gommern, near Magdeburg. The maker took a strong movement with a cylinder escapement measuring forty-five millimeters (1.77 inches) in diameter and began to hollow out the plate into halves. The opening of the plate into halves. The dial measures fifteen millimeters (0.59 inch), and in order to get these halves into the bottle another segment was cut out of each of the halves of the plate.

For a resting place of the movement a sort of tripod was constructed, which was put together after its parts had been introduced into the bottle separately. It was turned out in such a manner that it cannot turn during the winding of the movement. He fastened with screws to the platform attached to the top the four pieces of the plate side by side, using for this operation a long screwdriver and other tools especially constructed for the purpose.

The plate having thus been restored was put back in the original places with the motion wheels for the hands. Furthermore he placed around the neck of the bottle a ring of white metal upon which was soldered a round plate, completely covering the opening. Upon this were fastened the arms in an inclined position, these being intended to serve as supports for the dial. The dial is made of a ground glass plate having a diameter of 20 centimeters (7.9 inches). The figures are cut skeleton fashion and cemented to the glass. The minute lines are painted in black.

This arrangement permits the use of the timepiece for a night clock by placing a light behind the dial. The figures, which are 2 centimeters (0.79 inch) in length, are sufficient to give a clear view.

Another or a star which passes through the cover on the neck of the bottle carries at its lower extreme end a conical wheel, geared in the ratchet wheel, by means of which the hands may be turned. An-

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